REMARKS

Claim 3 and 4 are amended and claim 21 is added as a new claim herein. Support for the amendment is found, for example, in Example 1 of the specification.

I. Response to Obviousness-Type Double Patenting Rejections

Paragraph 4:

In paragraph 4 of the Action, claims 1, 3, 5 and 7-8, 10 and 11 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-2 of copending App. No. 10/855,868 (U.S. 2005/0013724 A1).

Applicants respectfully traverse the rejection as improper. According to the U.S. PTO Assignment Search database, the '724 publication is assigned to Sumitomo Light Metal Industries. See the attached Assignment record. Therefore, the obviousness-type double patenting rejection is improper since the '724 publication and the present application do not share a common inventor and are not commonly assigned. Further, the '724 publication does not qualify as prior art since the application for the '724 publication was not filed prior to Applicants' U.S. filing date.

Accordingly, Applicants respectfully withdrawal of the obviousness-type double patenting rejection over US '724.

Paragraph 5:

Claims 1, 3, 5, 7-8, 10, 11, 12, 14 and 15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-14 of copending App. No. 10/784,879 (U.S. 2004/0166442 A1).

Applicants defer responding to the provisional obviousness-type double patenting rejection.

Paragraph 6:

Claims 1, 3, 5, 7-8, 10, 11, 12, 14 and 15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-6 of copending App. No. 10/059,378 (U.S. 2002/0155377 A1).

Applicants defer responding to the provisional obviousness-type double patenting rejection.

Paragraph 7:

Claims 1, 3, 5, 7-8, 10, 11, 12, 14 and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-2 of U.S. Pat. No. 6,808,864 B2.

Applicants respectfully submit a Terminal Disclaimer, thereby obviating the obviousness-type double patenting rejection. Accordingly, Applicants respectfully request withdrawal of the rejection.

Paragraph 8:

Claims 1-16 are rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-11 of U.S. Patent No. 6,638,686 B2.

Applicants respectfully submit a Terminal Disclaimer, thereby obviating the obviousness-type double patenting rejection. Accordingly, Applicants respectfully request withdrawal of the rejection.

Paragraph 9:

Claims 1, 3, 5, 7-8, 10, 11, 12, 14 and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-6 of U.S. Patent No. 6,568,325 B2.

Applicants respectfully submit a Terminal Disclaimer, thereby obviating the obviousness-type double patenting rejection. Accordingly, Applicants respectfully request withdrawal of the rejection.

Paragraph 10:

Claims 1, 3, 5, 7-8, 10, 11, 12, 14 and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-4 of U.S. Pat. No. 6,494,137 B2.

Applicants respectfully submit a Terminal Disclaimer, thereby obviating the obviousness-type double patenting rejection. Accordingly, Applicants respectfully request withdrawal of the rejection.

Paragraph 11:

Claims 1, 3, 5, 7-8, 10 and 11 are rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-3 of U.S. Patent No. U.S. 6,194,082 B1.

Applicants respectfully submit a Terminal Disclaimer, thereby obviating the obviousness-type double patenting rejection. Accordingly, Applicants respectfully request withdrawal of the rejection.

Paragraph 12:

Claims 1, 3, 5, 7-8, 10 and 11 are rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-8 of U.S. Pat. No. 5,507,887.

Applicants respectfully submit a Terminal Disclaimer, thereby obviating the obviousness-type double patenting rejection. Accordingly, Applicants respectfully request withdrawal of the rejection.

II. Response to Claim Rejections under 35 U.S.C. § 102

Paragraph 14:

Claims 1-16 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Nishikawa et al (EP '574).

According to the Examiner, EP '574 teaches an aluminum alloy support for lithographic printing produced by cold rolling an aluminum alloy, which has a thickness of 0.1 to 0.5 mm

and is composed substantially of 0.05 to 3% Mg, 0.05 to 0.7% Si, 0.01 to 0.25% Zr, and 0.05 to 0.4% Fe (Abstract, claims and column 4, lines 39-58), with Cu, Zn and Ti as unavoidable impurities in an amount up to about 0.05% (column 3, line 30 to column 4, line 36). It is the Examiner's position that the support anticipates the claimed invention when provided with a photosensitive layer as described at column 6, lines 9-13.

Applicants respectfully traverse the rejection and submit that EP '574 does not anticipate the claimed invention. Applicants provide the following comparison between EP '574 and the present application.

	(1) EP '574 Disclosure	(2) Examples In EP '574	(3) The Present Invention	(4) Examples in Present Application
Al plate thickness	0.1~0.5mm	0.3mm	0.1~0.5mm	0.15~0.5
Mg	0.05~3 wt %	0.14~2.64 wt%	0.05 wt% or less	Not mentioned.
Si	0.05~0.7 wt%	0.09~0.52 wt%	0.03~0.15 wt%	0.08 wt%
Zr	0.01~0.25 wt%	0.05~0.14 wt%	Not mentioned. 0.05 wt% or less as impurity	Not mentioned.
Fe	0.05~0.4 wt%	0.15~0.33 wt%	0.05~0.29 wt%	0.29~0.35 wt%
Cu	0.05 wt% or less 0.002~0.04 wt%	0.008~0.018 wt%	0.02~0.05 wt%	0.020~0.04 wt%

As can be seen from the above table, EP '574 does not disclose a specific example that is within the scope of the present invention. Specifically, none of the alloys in Table 1

(Examples) of the reference meet the composition limitations of independent claim 1 of the present application as shown by a comparison between columns 2 and 3 in the above Table.

The present invention is directed to a support for a lithographic printing plate obtained by performing graining treatment including electrochemical graining treatment on an aluminum plate, wherein said aluminum plate contains Fe of 0.05 to 0.29 wt%, Si of 0.03 to 0.15 wt%, Cu of 0.020 to 0.050 wt% and Ti of 0.05 wt% or less and the remaining portion thereof is composed of aluminum and unavoidable impurities as recited in Claim 1. EP '574 describes "an aluminum alloy support for lithographic printing plates consisting essentially of Mg 0.05 to 3 wt%, Si 0.05 to 0.7 wt%, Zr 0.01 to 0.25 wt%, and Fe 0.05 to 0.4 wt%, with the balance being Al and impurities" in Claim 1. As is clear from the Table above, the present application does not include Mg and Zr as main components as in EP '574. EP '574 includes Mg and Zr as the essential alloy elements and does not include Ti as a main component, whereas Ti is an essential element of the presently claimed aluminum alloy.

In comparing the amounts of Zr between the present invention and EP`574, EP`574 includes Zr in an amount of 0.01-0.25% to improve burning resistance. However, Zr in excess of 0.25 wt% is not preferred since the crystalline structure becomes uneven during hot rolling, giving rise to crystal grain streaks. In the present application, Zr is not included as an essential alloy component. In the present application, Zr is included only as "unavoidable impurities", which may be contained in an amount of 0.05 wt% or less. For elements other than these elements, the contents conventionally known to the public may be contained. Thus, even assuming that Zr is one of the unavoidable impurities, it is only 0.05 wt% or less. This is because, while Zr has the effect of improving the strength, it has the side effect of

suppressing the evenness of the aluminum crystal during the heating treatment in producing the aluminum alloy. Therefore, the present application does not include Zr as an essential alloy component.

In comparing the amount of Mg between the present application and EP '574, EP '574 includes Mg in an amount of 0.05-3 wt% and discloses that with Mg in an amount of 0.05 wt% or less, the alloy plate does not have the required strength and mechanical resistance. On the other hand, in the present application, Mg may only be included in the amount of 0.05 wt% or less as unavoidable impurities.

In comparing the amount of Cu between the present application and EP `574, EP `574 discloses that Cu, Zn and Ti are unfavorable impurities contained in this kind of alloy. That is, Cu, Zn and Ti are undesirable impurities, and while their presence up to about 0.05 wt% is permissible, Cu in an amount 0.002 to 0.04 wt% (which is smaller than the permissible amount) is taught by EP '574 as desirable because it improves the etching performance of the alloy (column 4, lines 31-36). However, the amounts of Cu described in the Examples of EP '574 and Comparative Examples (Table 1) are only 0.008-0.018 wt%, 0.003 wt% in the commercially available product (AA1050-H18) containing a small amount of Cu and 0.13 wt% in the commercially available product (AA3003-H18) containing a large amount of Cu.

Turning to the present application, Cu is a very important element in controlling electrolytic graining treatment and is an essential element of the claimed invention (page 18, lines 7-9 of the specification). It is described that case of performing the electrolytic graining treatment for example in a nitric acid solution, the diameters of pits can be made higher by setting the content of Cu at 0.020 wt% or more, water retention of fountain solution in the

non-image areas can be largely secured when printing is performed after exposure and development, and thereby scum resistance is improved. It is also described that Cu content being more than 0.050 wt% is undesirable because the diameters of pits become too big (page 18, lines 9-20 of the specification). The inventors of the present invention have found that the pits with diameters of 0.5 μm or less produced by electrolytic graining treatment in a hydrochloric acid solution can be equalized and the increment rate of the surface area on the surface of the support can be maximized by setting the content of Cu in the specified range above. Since the contact area with the image recording layer can be made bigger by increasing the increment rate of the surface area, the adhesion on the areas is improved, thereby the printing plate is excellent in press life and cleaner press life. In addition, scum resistance is excellent when a lithographic printing plate is prepared (page 18, line 21-page 19, line 8 of the specification).

That is, it is first found by the present invention that, in case of performing the electrolytic graining treatment on the aluminum plate, an excellent press life and a high scum resistance, which have not been obtained conventionally, are achieved by setting Cu content in the aluminum alloy in the specified very narrow range of 0.02wt% to 0.05wt%, even though the conventional studies with regard to Cu content have been made only on its reduction as an impurity. Thus, the present invention is not disclosed, taught or suggested by EP '574.

In view of the above, the present invention is not anticipated nor rendered obvious by EP '574. Accordingly, Applicants respectfully request withdrawal of the rejection.

Paragraph 15:

Claims 1-11 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Suzuki et al (JP 2002-129270).

According to the Examiner, Suzuki et al teaches an aluminum alloy support having a crystal grain structure on the surface, a thickness of 0.1 to 0.5 mm, tensile strength of 145 to 190 MPa and comprises 0.10 to 0.40% Fe, 0.03 to 0.15% Si, 0.004 to 0.20% Cu, 0.01 to 0.05% Ti, 0.002 to 0.02% Mg, 0.001 to 0.030% Zr and 0.0001 to 0.02% B (Abstract, claims, [0021] and [0024]-[0030]).

First Applicants note that although the Examiner refers to the upper limit of the Cu as 0.20 wt%, the upper limit of Cu content in Suzuki et al is correctly 0.02 wt%. See, e.g., Abstract.

Suzuki describes that, if Cu content exceeds 0.020 wt%, the pit consistency of an electrochemical-surface-roughening side becomes low, pit size will be too large or a non-etched field will be generated. This spoils the water retention of the non-image section and thus is undesirable (see [0024]). Furthermore, it is disclosed that Cu content in excess of 0.020 wt% is not favorable since the ink dirt nature under printing is promoted and the amounts of Cu dissolution will increase, affecting the tensile strength. On the other hand, the present invention requires the specified amount of Cu content in the quite narrow range of 0.02-0.05 wt%, which is not described in the prior art, for the reasons discussed above. Therefore the present invention is not disclosed, taught or suggested by Suzuki et al.

In view of the above, the present invention is not anticipated nor rendered obvious by Suzuki et al. Accordingly, Applicants respectfully request withdrawal of the rejections under 35

U.S.C. § 102.

III. Response to Claim Rejections Under 35 U.S.C. §103

Paragraph 17:

Claims 1-20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hotta et al (EP 1 012 469 A1) in view of Suzuki et al (JP 2002-129270).

The Examiner admits that there is no description in Hotta et al about the desirable amounts of other elements. The position of the Examiner is that it would have been obvious to use an aluminum alloy support comprising 0.01 to 0.40% Fe, 0.03 to 0.15% Si, 0.004 to 0.020% Cu, 0.01 to 0.05% Ti, 0.002 to 0.02% Mg, 0.001 to 0.030% Zr and 0.0001 to 0.02% B with reasonable expectation of obtaining good print durability based on the teachings of Suzuki et al.

Applicants respectfully traverse the rejection. Applicants also note that, although the Examiner states 0.20 is the upper limit of Cu content, the upper limit of Cu content in Suzuki et al is correctly 0.02%. See Abstract; claims and [0024]. Further, the aluminum composition described in Suzuki is totally different from the present application as set forth above. Moreover, since neither one of Hotta et al or Suzuki et al discloses, teaches or suggests the presently claimed alloy for the reasons set forth above, one of ordinary skill in the art would not have been motivated to combine the references. Even if the references were combined, the present invention would not have been achieved.

Accordingly, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103.

IV. New Claim 21

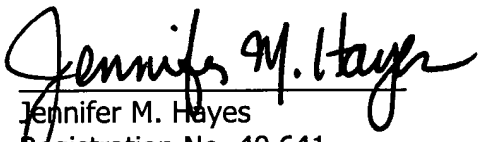
New claim 21 depends from claim 1 and is distinguished over the art for at least the same reasons.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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1 **Patent #:** NONE **Issue Dt:** **Application #:** 10855868 **Filing Dt:** 05/27/2004

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Title: Aluminum alloy sheet for lithographic printing plate

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